11300
EICO/tjh
02 Jan 02

MEMORANDUM

From: NAVFAC Engineering Innovation and Criteria Office (Code EICO)
To: Distribution

Subj: COORDINATION OF INTERIM TECHNICAL GUIDANCE (ITG) 02-2 OF 2001, ASHRAE STANDARD 90.1 OF 1999 (DRAFT)

Encl: (1) INTERIM TECHNICAL GUIDANCE (ITG) 02-2 of 2001, ASHRAE STANDARD
90.1 of 1999 (DRAFT)
(2) NAVFAC Form 11012/9 (5-90), "Engineering and Design Criteria Review" comment sheet

1. Enclosure (1) is forwarded for your review and comment or concurrence. Please provide comments using enclosure (2). Local reproduction of additional copies of enclosure (2) is authorized if required. An electronic copy of enclosure (2) is available from this office.

2. An essential comment covers requirements or provisions which need to be adopted or reconciled if the document is to be usable by the commenting activity. Please provide specific comments, accompanied by reasons, to assist in their understanding and resolution. Editorial and format comments will be considered as suggested comments.

3. To facilitate completion of the document on schedule, responses should be received no later than 30 January 2002. Please fax or e-mail your response to:

Tom Harris, P.E.
NAVFAC Criteria Office
Fax: 757-322-4416
Phone: 757-322-4206/DSN 262-4206
Internet address: harristj@efdlant.navfac.navy.mil

4. Questions concerning this document should also be addressed to Mr. Harris. Your assistance is appreciated.

R. D. CURFMAN
By direction

Subj: COORDINATION OF INTERIM TECHNICAL GUIDANCE (ITG) 02-2 OF 2001, ASHRAE STANDARD 90.1 OF 1999 (DRAFT)

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11300
EICO/tjh
21 Dec 01

From: Commander, Naval Facilities Engineering Command, Engineering Innovation and Criteria Office (Code EICO)

To: Distribution

Subj: INTERIM TECHNICAL GUIDANCE (ITG) 02-2 OF 2001, ASHRAE STANDARD 90.1 OF 1999 (DRAFT)

Encl: (1) ENERGY CONSERVATION CRITERIA using ASHRAE STANDARD 90.1 of 1999

1. Purpose. To provide interim technical guidance for using ASHRAE/IESNA Standard 90.1 of 1999, with ASHRAE/IESNA approved addendums, for design of new, and modifications of existing facilities. This guidance may be retained for record purposes until it is incorporated into Unified Facilities Criteria documents.

2. Background. The American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) recently issued Standard 90.1, "Energy Standard for Buildings Except Low-Rise Residential Buildings", dated 1999. Enclosure (1) provides guidance for the use of ASHRAE STD 90.1 of 1999. On 8 Oct. 2001, the Department of Energy removed 10 CFR 435 and issued 10 CFR 434. DON made a recommendation to the Engineering Senior Executive Panel (ESEP) to adopt ASHRAE/IESNA Standard 90.1 of 1999 in lieu of 10 CFR 434. The ESEP approved using Standard 90.1 of 1999 on 11 October 2001.

3. Action.

a. Design. All projects starting design after 8 October 2001 shall meet or exceed the energy conservation requirements of ASHRAE/IESNA Standard 90.1 of 1999, and enclosure (1).

b. Criteria. The NAVFAC Engineering Innovation and Criteria Office (EICO) will develop a Unified Facilities Criteria document to incorporate the use of ASHRAE/IESNA Standard 90.1 of 1999 in lieu of the DoD Design Energy Targets.

4. Coordination. This ITG has been coordinated within NAVFACENGCOM, and the NFESC Energy Project Team.

5. Points of Contact. For additional information concerning ASHRAE/IESNA Standard 90.1,
the following points of contact are provided: NAVFAC EICO - Mr. Thomas J. Harris, P.E. at DSN 262-4206, commercial 757-322-4206, FAX at 4416, or via Internet at harristj@efdlant.navfac.navy.mil.
Subj: INTERIM TECHNICAL GUIDANCE (ITG) 02-2 OF 2001, ASHRAE STANDARD
90.1 OF 1999 (DRAFT)

R. D. CURFMAN
By direction

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USAF CESA-(HQ AFCESA/Day)

Subj: INTERIM TECHNICAL GUIDANCE (ITG) 02-2 OF 2001, ASHRAE STANDARD
90.1 OF 1999 (DRAFT)

Blind copy to:
EICO/tjh
EICO(RF)

ENERGY CONSERVATION CRITERIA
Using
ASHRAE STANDARD 90.1 of 1999

1. **Purpose and Scope.** This Interim Technical Guidance (ITG) establishes the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 90.1 of 1999, with approved addendums, as the standard and minimum criteria to ensure that energy-conserving designs are developed for new construction and major renovation projects for facilities on Department of the Navy (DON) installations. All applicable life-cycle cost-effective energy-conservation features shall be incorporated into project designs, using appropriated or other funds, unless Life-Cycle-Cost-Analysis (LCCA) calculations are included in the design file that indicate the particular energy conservation feature is not cost effective per Executive Order 13123.

2. **Applicability and Cancellation.** The Department of Defense has adopted the ASHRAE Standard 90.1 of 1999, in lieu of 10 CFR 434, per Section 306 of the Energy Conservation Policy Act, as amended; and per the National Technology Transfer and Advancement Act of 1995, Section 12(d), Pub. L. 104-113. The DESIGN ENERGY TARGET REDUCTIONS, INTERIM TECHNICAL GUIDANCE dated 5 June 1995 is hereby cancelled and replaced by this Interim Technical Guidance until such time as a Unified Facility Criteria document is published for the Tri-Services.

3. **General Guidance.** Accomplish the facility functional requirements using the least complex design that meets the requirements of ASHRAE Standard 90.1 of 1999. Place emphasis on using passive features (e.g. insulation, orientation, etc.) vice active systems (e.g. heat recovery, co-generation, etc.).

4. **Compliance.** This ITG applies to all DON buildings except Low-Rise Residential Buildings, in accordance with ASHRAE STD 90.1 of 1999, Section 2. It does not apply to family housing (single family, duplex, and three story or less apartment buildings), or to buildings primarily housing industrial, manufacturing, and commercial equipment and processes. For the building types listed in ASHRAE STD 90.1 of 1999, Section 4, design per the Sections 5, 6, 7, 8, 9, & 10, **OR** per Section 11. Provide the Compliance Documents required by Section 4.3, submitting them for review and approval by the Contracting Officer. Building designs intended to comply with Section 11 shall also be fully documented per Section 11.1.5. Simulation programs shall comply with Section 11.2.

5. **Interpretation of Terms.** Interpret the terms used in ASHRAE STD 90.1 of 1999 as follow:

> "Authority having jurisdiction (AHJ)" to mean the Contracting Officer or his representative; the Government Project Manager or Design Engineer during design, and the ROICC during construction.

"Building Official" to mean a representative of the Contracting Officer.

"Owner" to mean the government.

"Permit Holder" to mean the contractor.

6. **Life Cycle Cost Analysis.** For designs per Section 11 of ASHRAE STD 90.1 of 1999, computer calculations shall be performed using a computer program determined to be equivalent to the Life Cycle Cost in Design (LCCID) program, PC-Econpack, or Building Life Cycle Cost (BLCC). Document in the design analysis and retain in the project file, the essential elements of the design selection process, including as a minimum, the basis for which the list of feasible alternatives was developed and the basis upon which the various design decisions were reached.

7. **Energy Costs to be Included.** For a single building or facility served by a remote energy plant, located outside the five-foot line, include all energy costs in the LCCA. For buildings or facilities served by central energy plants, include only the net energy costs attributable to the building or facility being studied. Credit the building for any energy returned to the central plant, such as steam condensate or return hot or chilled water. Distribution losses and plant conversion losses shall not be attributed to the building or facility.

8. **Meters.** Recommend providing a meter for each utility serving the building (e.g. steam, high or low temperature hot water, electricity, natural gas, fuel oil, etc.), calibrated in the units billed by the utility supplier (i.e. kW-hr, cubic feet, gallons, pounds, etc.) to allow determination of energy consumption and verification of utility bills. As a minimum, make provisions for check metering or meter installation to allow energy analysis surveys of the facility; show the locations on the utility service drawings and one-line diagrams.

NAVFAC 11012/9 (5-90) ENGINEERING AND DESIGN CRITERIA REVIEW					Date:
FROM: ORGANIZATION/ACTIVITY & CODE					
TO: NAVFAC CODE EICO/TJ HARRIS				DSN 262 4206, FAX 262-4416, harristj@efdlant.navfac.navy.mil	
SUBJECT: ITG 02 – 2 of 2001 DOCUMENT NUMBER AND TITLE				Interim Technical Guidance, ASHRAE Standard 90.1 of 1999 (Draft)	
REVIEWER			PROF. REG:		SIGNATURE:
PHONE NO. AUTOVON				COMMERCIAL:	
NO.	PAGE	PARA	E/S	COMMENT (REVISION AND REASON)	RESOLUTION OF COMMENT

Enclosure (2)